

*BCD*  
B<sub>2</sub>H<sub>6</sub>, PH<sub>3</sub> or the like, if necessary) is fed from the supply duct 41 through the supply port 43 of the shower head 42, and the gas pressure is set at 10<sup>-1</sup> to 10<sup>-3</sup> Torr, for example, 10<sup>-2</sup> Torr. The hydrogen-based carrier gas may be any gas that is produced by mixing an appropriate quantity of inert gas with hydrogen, for example, hydrogen, hydrogen + argon, hydrogen + helium, hydrogen + neon, hydrogen + xenon, hydrogen + krypton or the like. (This applies throughout the following description.) The hydrogen-base carrier gas is not necessarily required, depending on the type of the material gas. That is, there is known a method for forming polysilicon by catalytic reaction of silane alone without using the hydrogen-based carrier gas (known as a hot wire method), and the present invention can also apply to this method. --

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